I claim:

1. A method for monitoring information in a medium, the medium comprising at least one biomolecule, the method comprising the steps of:

screening the medium with a screening means comprising a n number of sensing probes, where n is an integer of at least one so that more than one physical, chemical, or physico-chemical change which defines the information is detected by the probe to produce at least one signal output;

transferring the signal output to a signal processing means responsive to differences in electromagnetic properties of the signal for generating a final output;

receiving the final output into a pattern recognition means sufficient to generate a measurement pattern of the information being operable to define a set of class boundaries; and

sorting the information in accordance with the class boundaries representative of the presence and preferably quantitative amounts of biomolecule in the medium.

2. The method according to claim 1, wherein the medium is a gas or a liquid or a solid or a combination of several phases.

3. The method according to claim 1, wherein the n number of sensing probes is a multiple sensor array.

4. The method according to claim 1, wherein the sensing probe is a semiconductor gas sensor.

5. The method according to claim 1, wherein the medium is a gas or a vapor, and wherein the sensing probe comprises at least one of a doped metal oxide gas sensor or an undoped metal oxide gas sensor used in gas or vapor phase.

6. The method according to claim 1, wherein the sensing probe comprises at least one conductive polymer sensor.

7. The method according to claim 1, wherein the sensing probe is at least one of a vibrating or resonant micromechanical device.

8. The method according to claim 7, wherein the sensing probe has a coating.

9. The method according to claim 1, wherein the n number of sensing probes is a mass spectrometer.

10. The method according to claim 1, wherein the sensing probe is an optical sensing probe.

11. The method according to claim 1, wherein the sensing probe is, at least in part, an optical fiber.

12. The method according to claim 1, wherein the information comprises at least one of odorous or volatile chemical species characteristics of the presence of the biomolecule or the part of the biomolecule.

13. The method according to claim 1, wherein at least part of the information detected by the probe is changes in the concentration of the biomolecule.

14. The method according to claim 1, wherein at least part of the information detected by the probe is changes in a secondary product of the biomolecule.

15. The method according to claim 1, wherein at least part of the information detected by the probe is changes in a radiative property of the electromagnetic spectrum of the biomolecule.

16. The method according to claim 1, wherein at least part of the information detected by the probe is changes in a non-radiative property of the electromagnetic spectrum of the biomolecule.

17. The method according to claim 1, wherein at least part of the information detected by the probe is changes in a non-radiative property of the electromagnetic spectrum of a secondary product of the biomolecule.

18. The method according to claim 1, wherein the medium comprises at least one of organic or inorganic reagent.

19. The method according to claim 1, wherein the multivariate analysis is principal components analysis.

20. The method according to claim 1, wherein the multivariate analysis is deterministic finite-state automata.

21. The method according to claim 1, wherein the multivariate analysis is partial least squares.

22. The method according to claim 1, wherein the multivariate analysis is trained or supervised.

23. The method according to claim 1, wherein the multivariate analysis is untrained or unsupervised.

24. The method according to claim 1, wherein the signal processing means comprises a frequency analyzer.

25. The method according to claim 10, wherein the optical sensing probe is an apertured probe.

26. The method according to claim 10, wherein the optical probe is an apertureless probe.

27. An apparatus for analyzing at least one biomolecule in a medium, comprising:

a multivariate detector having at least one of a sensing probe, sensing location, or physicochemical property,

said multivariate detector capable of detecting at least the biomolecule, a byproduct, or a secondary product thereof, and discriminating the biomolecule, the byproduct, or the secondary product from the medium;

transmission means, capable of transmitting a signal between the multivariate detector and a data acquisition system, capable of converting the signal into raw data;

a computational device capable of processing at least part of the raw data using multivariate analysis to create a data set; and

an output device capable of displaying, storing, or using the data set.

28. The apparatus according to claim 27, wherein the output device is a feedback control capable of using the data set to control a biological replication process.

29. The apparatus according to claim 28, wherein the analyte is DNA or a fragment thereof, and the feedback controls a polymerase chain reaction in approximately real time.

30. A process controller for controlling a biological replication process, comprising:

a multisensor array having more than one sensing location capable of detecting a nucleotide or polynucleotide, discriminating the nucleotide or polynucleotide from the medium, and generating an output;

a computational device capable of processing the output using multivariate analysis to create a data set; and

a feedback control capable of using the data set to control the biological replication process.

31. The process controller according to claim 30, wherein the analyte is DNA or a fragment thereof, and the feedback controls a polymerase chain reaction in real time.

32. An apparatus for screening at least one of a cell, bacteria, a bacteriophage, or a virus in a medium, comprising:

a multisensor array having at least one sensing location capable of detecting a nucleotide or polynucleotide that is extracted from the bacteria, bacteriophage, or virus;

means for discriminating the nucleotide or polynucleotide from the medium;

means for generating an output;

a computational device capable of processing the output using multivariate analysis to create a data set; and

an output device capable of displaying, storing, or using the data set.

33. An apparatus for analyzing at least one of a cell, a bacteria, a bacteriophage, or a virus in a medium, comprising:

a multisensor array with more than one sensing location, the array capable of detecting a molecule created or modified by the bacteria, the bacteriophage, or the virus, discriminating the molecule from the medium, and generating an output;

a computational device capable of processing the output using multivariate analysis to create a data set; and

an output device capable of displaying, storing, or using the data set.

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34. A method of analyzing at least one of DNA, RNA, AIDS, a nucleotide, a biomolecule, or cancer, comprising:

analyzing a sample with the apparatus according to claim 33.

35. The method of claim 1, further comprising the steps of:

obtaining a multivariate analysis reference model based on the signal output; and screening an analyte selected from the group consisting of a biomolecule, a biomolecule fragment, a biomolecule byproduct, a medium, a reagent, and a tag, to predict the property of the biomolecule.

36. The method of claim 1, further comprising the step of comparing the class boundaries with properties of a second group of signal outputs.

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